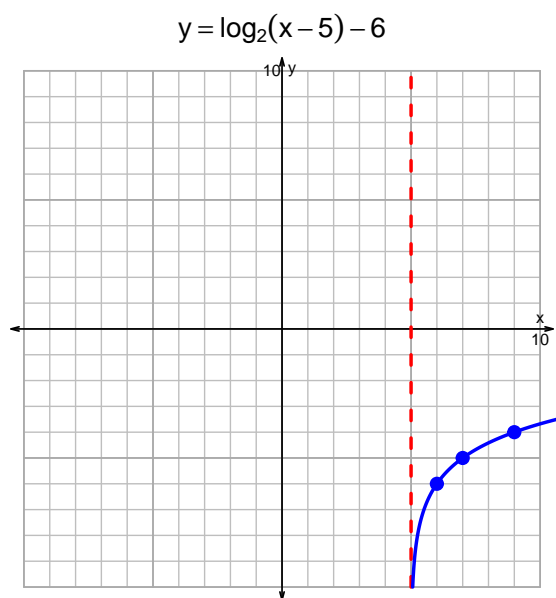
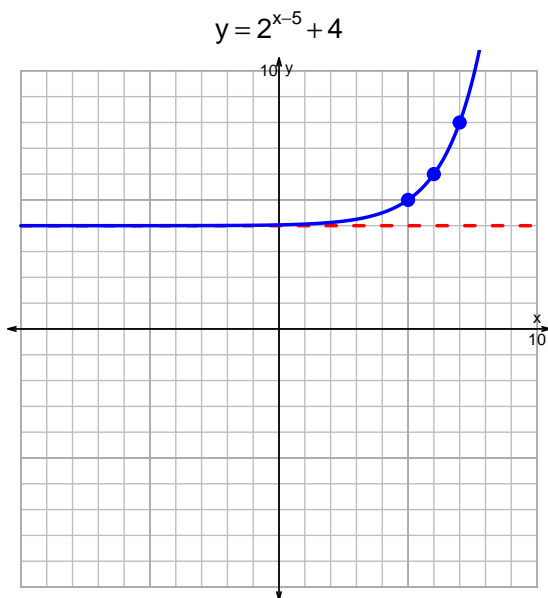


Name: _____

Date: _____

s18QUIZ: EXP LOG (SLTN v236)

1. Graph $y = 2^{x-5} + 4$ and $y = \log_2(x - 5) - 6$ on the grids below. Also, draw any asymptotes with dotted lines.



2. Write (but do not evaluate) the solution to the equation below by writing a logarithmic expression.

$$-17 = \left(\frac{-7}{5}\right) \cdot 2^{4t/3}$$

Divide both sides by $\frac{-7}{5}$.

$$\frac{17 \cdot 5}{7} = 2^{4t/3}$$

Take log, base 2, of both sides.

$$\log_2 \left(\frac{17 \cdot 5}{7} \right) = \frac{4t}{3}$$

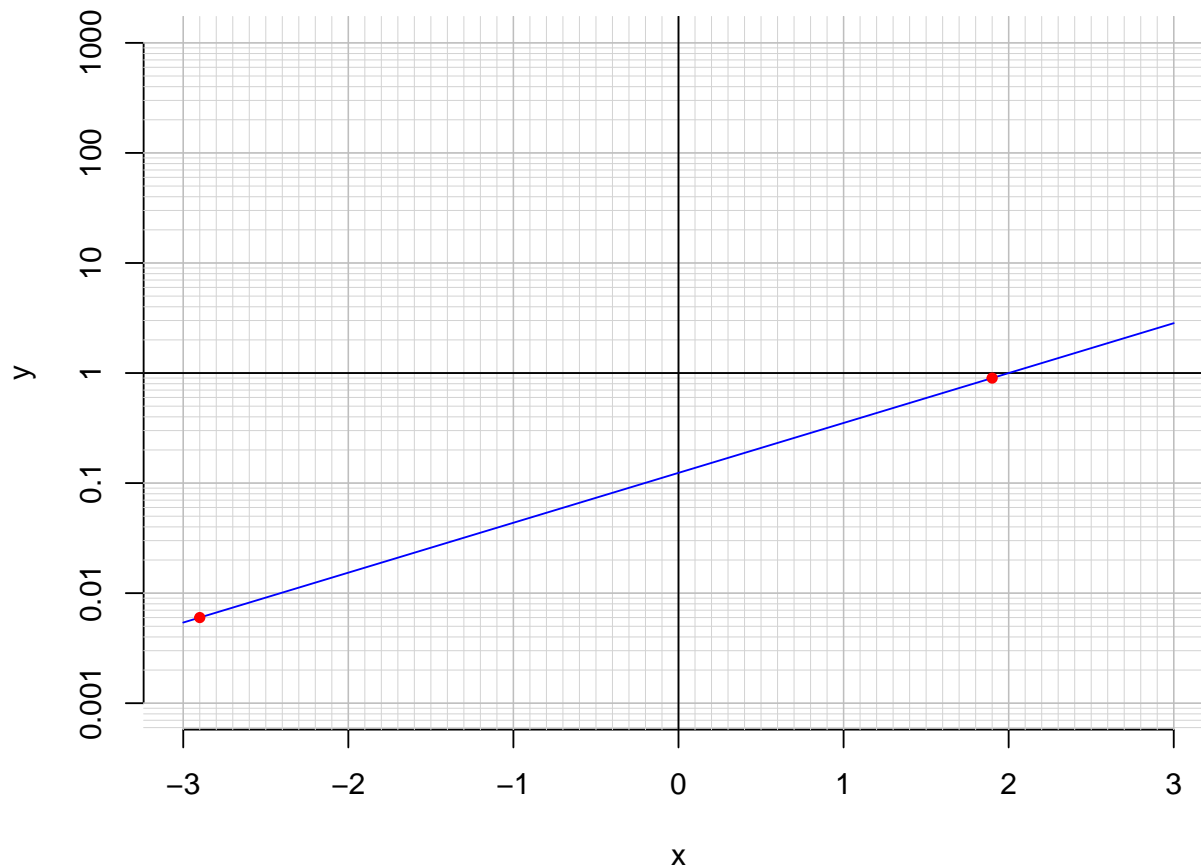
Divide both sides by $\frac{4}{3}$.

$$\frac{3}{4} \cdot \log_2 \left(\frac{17 \cdot 5}{7} \right) = t$$

Switch sides.

$$t = \frac{3}{4} \cdot \log_2 \left(\frac{17 \cdot 5}{7} \right)$$

3. An exponential function $f(x) = 0.124 \cdot e^{1.04x}$ is graphed below on a semi-log plot.



- a. Using the plot above, evaluate $f(-2.9)$.

$$f(-2.9) = 0.006$$

- b. Express $f^{-1}(x)$, the inverse of f .

$$f^{-1}(x) = \frac{1}{1.04} \cdot \ln\left(\frac{x}{0.124}\right)$$

- c. Using the plot above, evaluate $f^{-1}(0.9)$.

$$f^{-1}(0.9) = 1.9$$